several articles published in the *Gardeners' Chronicle* and in his book "Among the Hills," which appeared in 1911.

In 1903 Farrer undertook a journey round the world, visiting among other places Canada, China, and Japan. He visited Ceylon in 1907, and the years 1914 and 1915 were spent, in company with Mr. William Purdom, formerly of Kew, in exploring the Kansu region of Western China. "On the Eaves of the World," published in 1917, is a narrative of his wanderings and experiences during 1914, which were also the subject of a series of articles in the *Gardeners' Chronicle*. Last year another journey to Eastern Asia was undertaken with Mr. E. H. M. Cox. When about to return home, while travelling on the frontier range between Burma and China, Farrer fell a victim to diphtheria, and died on October 16.

Among the plants Farrer discovered were many new to botany as well as to horticulture. Several new species bear his name; he is also commemorated in Farreria, a new genus of Thymelæaceæ. In addition to works of fiction and those already specified, he wrote "My Rock Garden" (1907), "Alpines and Bog Plants" (1908), "In a Yorkshire Garden" (1909), "The Rock Garden" (Present-day Gardening Series), and "The English Rock Garden"; the last, containing more than 1000 pages and 102 plates, was published in 1919, and was reviewed, perhaps somewhat adversely, in NATURE for February 19 last, p. 664.

In spite of the extravagant, sometimes absurd, language of many of Farrer's writings, he accomplished much work of great value, and his untimely death is a distinct loss, which many will profoundly regret.

Notes.

THE Ministry of Agriculture and Fisheries has issued a memorandum (General Service, November 13) on the mode of spread of foot-and-mouth disease. The outbreaks which have occurred since the beginning of 1919 have enabled a closer analysis to be undertaken of the circumstances favouring infection than has hitherto been possible, the work being carried out by the Chief Veterinary Officer, Sir S. Stockman. One fact emerges as established, viz. that Great Britain, freed from the disease as endemic among animals in a particular district, is invaded only when the disease is prevalent on the Continent, particularly in the North of France, Belgium, and Holland. Livestock being excluded as a factor of spread of the disease, suspicion falls on human beings, on imported feeding-stuffs, and on litter coming from infected Continental districts. Importation of hay and straw, except for exceptional purposes, has, however, been prohibited since 1908 without materially influencing the occurrence of outbreaks. Carriage of infection by human beings and other means, *e.g.* by bird migration, seems equally improbable. The conclusion is drawn that the virus may be air-borne. The sick animals slobber, and it seems reasonable to suppose that the particles of infected mucus may be carried for long distances in the air, just as volcanic dust is. The outbreaks in this country are more frequent in some districts than in others, and it is suggested that in the areas mostly invaded air-pockets of negative pressure may exist which would account for the suspended virus descending to earth or water.

IN a lecture on "Eugenics and Religion," delivered on November 16 under the auspices of the Eugenics Education Society, Dean Inge pointed out that antagonism to reasonable eugenics, *e.g* the prevention of deaf-mutes and epileptics from having children, comes not from religion, but from the anti-scientific temper. A general revolt against the dictatorship of science (surely not yet even on the horizon) had been the most remarkable tendency in modern thought. But it seems to us it would have been more accurate to say that the objections even to considering the scientific control of life have come from a widespread sluggishness of intellect, an instinctive dislike of upsetting innovations, and, not infrequently among the elect, an other-worldliness which regards mundane conditions as a swamp to be crossed as quickly as possible. According to Dean Inge, the prospect for the immediate future is as black as it could be, and partly because society has not the seriousness and courage to replace a relaxed natural selection by a thought-out rational selection. At present we are breeding from our worst stocks, and our best are being squeezed out of existence—an extreme statement, probably too epigrammatically reported. But it has enough of truth in it to make us uncomfortable. We note, however, to take a glimpse of the other side, that, apart from the professional classes, many members of which are now prompted by economic pressure to restrict their family or to have none at all —which, as Dean Inge says, means a diminution of the well-born—there is an abundant supply of strong, intellectually alert, and good-willed men and women among working people. It appears to us to be historically true that a large proportion of the men who count have emerged, not from select castes, but from the general body of the population. Dean Inge attaches great importance to the post-war strain on professional men, which makes for restriction of the family, but this has been going on for a long time. He looks forward to a keen struggle for subsistence, which will force man to become a eugenist or to go under. Towards extreme struggle the nation is at present hurrying blindly.

THE chairman of the Colour Users' Association, Mr. Vernon Clay, has issued an important memorandum on the present position of the dye industry in Great Britain from the users' point of view. It is stated that the necessity for the establishment of dye-making factories is particularly a question of national security, because they are capable of maintaining a larger number of trained scientific workers than any other industry. At present the chief drawback with which the dye manufacturer has to contend is lack of experience in factory production, and while he is obtaining this knowledge some sort of protection must be afforded him. Three methods of safeguarding the infancy of the industry have been suggested. The first, by tariffs, is regarded as useless on account of the fluctuating rates of exchange; the second, by subsidy, is also ruled out owing to the difficulty of allocating a grant in an industry which has numerous by-products; and the third, by prohibition and licensing, is regarded as the only practicable scheme. Only dyes the home manufacture of which was inadequate in quantity or quality would be admitted under licence as imports. Under the Peace Treaty Germany must sell a proportion of her dyestuffs to this country until 1925 at rates similar to those which she obtains from other customers, so that the consumer is protected until that date. The manufacturer receives no benefit, and probably will require financial assistance to enable him to establish his industry. Assuming that after January, 1925, a licensing body were set up, the State, the dye makers, and the dye consumers should be represented on it; the last should have the preponderating voice because they will bear the brunt of the expense and inconvenience caused, and are the persons who can best gauge the effects on export trade, but the Government would retain the right of veto. The Government urges that this would place the power to defeat legislation in the hands of the consumers, and therefore negotiations between the association and the Government have proved unsatisfactory.

A DECISION which will be of interest to all scientific workers was given by Mr. Justice Eve in the Chancery Division of the High Court on Wednesday, November 17, on the motion for an injunction to prevent Messrs. Brunner, Mond, and Co. from distributing 100,000*l.*, as it was authorised to do by an extraordinary general meeting on August 5. It will be remembered that at this meeting the directors were empowered to distribute that sum to such universities or other scientific institutions in the United Kingdom as they might select for the furtherance of scientific education and research. The money was to be provided from the investment surplus reserve account. It was urged that in carrying out the resolution the directors would be acting in a way which was outside the scope of the stated objects of the company, but Mr. Justice Eve ruled that the resolution came within the bounds of what was likely to lead to the direct advantage of the company, and therefore refused to make an order on the motion.

FROM time to time scanty information has reached this side of the Atlantic of developments in the use of "colloidal fuel," and experts have looked forward to receiving fuller information by which they could judge the value of the many claims put forward. Mr. Lindon W. Bates, with whom has been associated Mr. Haylett O'Neill, has been the pioneer of colloidal fuel, and these gentlemen read papers before the Institution of Petroleum Technologists on November 16 in which they put forward all that could possibly be claimed for this particular type of fuel. It was described as a stable, mobile, atomisable fuel displaying colloidal characteristics, comprising particles of solids, droplets of liquids, or minute bubbles of gas suspended in one or more varieties of liquid hydrocarbons. For commercial purposes it contains 25 to 40 per cent. of pulverised coal, which is held in stable suspension in oil, so that the product can be handled and fired with the usual oil-burning apparatus. The solid components may be coal, coke, charcoal, hard pitch, or any grindable carbonaceous substance, for the best results ground so fine that 97 per cent. will pass through a 100-mesh screen and at least 85 per cent. through a 200-mesh screen, and but little is stated to settle out in reasonable periods. The colloidal fuel is often volumetrically richer in heat units than the straight oil, and a saving of cost as compared with straight oil is shown, but this is far from holding as compared with powdered coal. In general, the efficiencies of oil and colloidal fuel are claimed to be substantially the same, and it is stated that there is some evidence that a surface combustion effect on the myriads of fine particles of solid is favourable to efficiency.

SIR FREDERIC KENYON has been elected a foreign associate, and Sir George Grierson a foreign correspondant, of the Paris Academy of Inscriptions and Belles Lettres.

BY the will of Mr. E. W. Smithson, who died on August 11, leaving estate of the value of 40,010*l.*, the ultimate residue, after the death of his wife, is bequeathed to the Royal Society "for the furtherance of research in natural science, with a view of new laws or principles rather than the exploitation of what is known."

THE Cavendish Society, Cambridge, has decided to reinstitute its annual dinner, and has fixed the date this year for December 10. This dinner, with its post-prandial proceedings of topical physics songs, is a well-known function to former physics research workers at Cambridge. Information may be had from the Secretary, Cavendish Laboratory.

THE KING has given orders for the following appointments to the rank of Commander of the British Empire (C.B.E.), to be dated June 5, 1920:—Dr. A. C. Jordan, for work in connection with radiology at Queen Alexandra's Hospital; Mr. H. A. Madge, principal technical adviser on the wireless telegraphy staff of H.M. Signal School; and Dr. F. Mollwo Perkin, for valuable services rendered to various Departments of State.

THE Secretary of State for the Colonies has appointed a Committee to consider and report what steps can be taken to secure the assistance of the universities of this country in carrying out the research work which is essential to the protection of the inhabitants of the Colonies and Protectorates from disease and to the successful development of their veterinary, agricultural, and mineral resources. The members of the Committee are:—The Right Hon. Lord Chalmers (chairman), Sir H. Birchenough, Sir J. Rose Bradford, Sir W. Fletcher, Prof. E. B. Poulton, Sir D. Prain, Sir H. Read, Sir S. Stockman, and Sir A. Strahan. Mr. A. B. Acheson, Colonial Office, is the secretary of the Committee.

THE following have been elected members of council of the Röntgen Society for the ensuing year:—*President:* Dr. R. Knox. *Vice-Presidents:* Prof. A. W. Porter, Prof. J. W. Nicholson, and Dr. G. H. Rodman. *Hon. Secretaries:* Dr. R. W. A. Salmond, 51 Welbeck Street, W.1, and Dr. E. A. Owen, National Physical Laboratory, Teddington, Middlesex. *Hon. Treasurer:* Mr. Geoffrey Pearce. *Hon. Editor:* Major G. W. C. Kaye. *Other Members of Council:* Dr. J. Metcalfe, Mr. E. P. Cumberbatch, Dr. A. E. Barclay, Mr. F. J. Harlow, Dr. W. Makower, Mr. J. Russell Reynolds, Prof. A. O. Rankine, Mr. Cuthbert Andrews, Major C. E. S. Phillips, Dr. R. Morton, Sir A. Reid, and Mr. A. E. Dean. The names in the above list are in order of seniority.

THE Forestry Commission, in consultation with the India and Colonial Offices, has appointed an Inter-Departmental Committee to prepare a scheme for giving effect to the resolutions of the British Empire Forestry Conference with regard to a central institution for training forest officers, including (1) its location; (2) its organisation, constitution, and control; (3) its cost and method of financing; (4) its relation to forest research; and (5) the qualifications, selection, and cost of maintenance of students. The Committee consists of the following members:—Right Hon. Lord Clinton, representing the Forestry Commission (chairman); Mr. P. H. Clutterbuck, representing the India Office; Major R. D. Furse, representing the Colonial Office; Sir Ronald Munro-Ferguson; and Prof. J. B. Farmer. Mr. W. H. Guillebaud, Forestry Commission, 22 Grosvenor Gardens, S.W.1, will act as secretary to the Committee.

MR. L. H. DUDLEY BUXTON, of the department of human anatomy, University Museum, Oxford, has been invited by Dr. Zammit, of the Malta University, to conduct an investigation of the physical characters of the ancient and modern inhabitants of Malta. A party, consisting of Mr. Buxton, Mr. A. V. D. Hort, of Brasenose College, Mrs. Jenkinson, of Somerville College, Miss Moss and Miss Mond, of Lady Margaret Hall, under the leadership of Mr. Buxton, will visit the island for this purpose during the coming Christmas vacation. Archæological investigations will also be undertaken, but only in so far as these may be necessary to throw light upon the physical anthropology. The expedition has received the approval of the Governor of Malta, and the expenses will be met by a grant from the Mary Ewart Trust and by a generous donation of 100*l.* from Sir Alfred Mond. A report on the results of the expedition is to be presented at a meeting of the Royal Anthropological Institute to be held early in the spring.

THE Institute of Industrial Administration is holding a meeting at the Central Hall, Westminster, on December 7, at 7 p.m., when Mr. Richard Twelvetrees will read a paper on "Road Transport as an Aid to Industrial Management." The chair will be taken by Mr. E. Shrapnell-Smith, chairman of the Commercial Motor Users' Association, and the subject will be discussed from various aspects, including the development of roads, traffic congestion, handling of goods, and the design and maintenance of road motor vehicles. The lecture will be illustrated by kinematograph pictures, and various interesting models will be on view. Up to the present time the development of road transport has been largely regarded as the province of the engineers responsible for the manufacture of the actual vehicles employed, but it is expected that a much wider field of discussion will be opened by the lecture, which should be of scientific interest, and readers of NATURE are invited to attend.

THE Institute of Physics has now been incorporated and has begun to carry out its work. The object of the institute is to secure the recognition of the professional status of the physicist and to co-ordinate the work of all the societies interested in physical science or its applications. Five societies have already participated in this co-ordination, namely, the Physical Society of London, the Optical Society, the Faraday Society, the Royal Microscopical Society, and the Röntgen Society. The first president is Sir Richard Glazebrook, who will preside at the opening statutory meeting of the institute, which will be held early in the new year. The list of members now includes the names of more than two hundred fellows. Sir J. J. Thomson, the retiring president of the Royal Society, has accepted the invitation of the board to become the first, and at present the only, honorary fellow. It is a tribute to the status already acquired by the newly formed institute that its diploma is now being required from applicants for Government and other important positions requiring a knowledge of physics. Particulars with regard to the qualifications required for the different grades of membership can be obtained on application to the secretary, Mr. F. S. Spiers, 10 Essex Street, London, W.C.2. Fellows elected before May 1, 1921, will have the privilege of being styled founder fellows.

THE new premises of the London School of Tropical Medicine and the Hospital for Tropical Diseases, Endsleigh Gardens, N.W.1, were opened by the Duke of York on November 11. Lord Milner in an introductory address sketched the history of the school, which owed its inception to Sir Patrick Manson during the Colonial Secretaryship of Mr. Joseph Chamberlain, who welcomed and helped the scheme. Opened in 1899, the work of the school was carried on for twenty years in buildings at the Branch Hospital of the Seamen's Hospital Society, Royal Albert Dock. During the war it was found desirable to remove the school to a more central position in London. Through the generosity of the Red Cross Society 100,000*l.* was received for the purchase of the new buildings, and it became necessary to raise an additional sum of 150,000*l.* for the endowment of the school, of which more than 100,000*l.* had been collected. The Duke of York, in declaring the buildings open, paid a tribute to the successive Colonial Secretaries who had furthered the progress of tropical medicine, and unveiled a tablet recording the munificent gift of the British Red Cross Society and the Order of St. John of Jerusalem. One of the wards in the hospital has been endowed by the Mesopotamia Comforts Committee in recognition of the services of Sir Stanley Maude, to whose memory a mural tablet was unveiled. It is a pleasure to record that Sir Patrick Manson, the "father" of the school, was able to be present at the ceremony.

SIR CHARLES LYELL in his "Antiquity of Man" remarked that "neither need we despair of one day meeting with signs of man's existence in the Cromer Forest bed, or in the overlying deposits, on the ground of any uncongeniality of the climate or incongruity in the state of the animate creation with the well-being of our species." Mr. J. R. Moir in a paper republished from the Proceedings of the Prehistoric Society of East Anglia for 1919–20 (vol. iii., part ii.) describes a series of humanly fashioned flakes found in the cliffs and on the shore at Mundesley, Norfolk. Discoveries of similar flakes were made by Mr. Lewis Abbott in 1897 and by Dr. W. L. H. Duckworth in 1911. So far no human bones have been found in these strata, but the author notes that the Mauer Sand in which the famous Heidelberg mandible was found corresponds in date of formation with the Cromer Forest bed.

THE definition of the term "species" in biology is a perennial source of discussion. Dr. J. Massart considers that the Linnean definition—"the smallest assemblage of organisms that resemble one another more than they resemble others, and that transmit their peculiarities to their descendants"—corresponds neither to the Linnean species nor to the Jordanian species, but to the pure line of Johannsen. This last, however, need not be propagated by self-fertilisation, nor need the parents be homozygotes, for self-sterile and heterozygote lines are known. Dr. Massart illustrates his remarks by observations on the ilex, in a single grove of which tree he claims to have detected thirty-two distinct lines. Clearly, as he says, the systematist and the geographer must content themselves for the present with Linnean, or at the most with Jordanian, species. Dr. Massart's paper is published by the Belgian Academy (*Bull. Classe des Sciences*, 1920, pp. 366–81).

THE *Review of Applied Entomology*, now approaching the completion of its eighth volume, is a monthly publication of widely recognised value. For the modest sum of 18*s*. per annum one is enabled to keep abreast of all published work in the agricultural, medical, and veterinary aspects of the subject. Since the review was commenced an increasing number of articles in out-of-the-way periodicals have been abstracted, particularly those in the Russian and Spanish languages. It may be said that it is largely due to these abstracts that the work of Russian economic entomologists is being more widely known in this country and America. "Economic" entomology is interpreted in a liberal sense, and no very hard-and-fast line of demarcation is drawn between it and "scientific" entomology. For this reason the professedly scientific student should not neglect to peruse the pages of this valuable journal, for only by its means are many unfamiliar papers likely to be brought to his notice.

THE *Volta Review*, the Washington monthly devoted to speech-reading, speech, and hearing, is printing and issuing in the form of reprints a series of profusely illustrated articles on the mechanism of speech by Dr. E. W. Scripture, the author of the Carnegie Institution publication on "The Study of Speech Curves," of "Elements of Experimental Phonetics," and other related works. The series promises to be of great interest to students of phonetics, to those with normal hearing no less than to those who are handicapped in this respect. The voiced *h* of the Sanscrit grammarians is not quite such a novelty in Europe as would appear from p. 5 of the first article (July, 1920). Its existence in English was recognised by David Lyle in his "Art of Shorthand Improved" (1762), and its claims, though denied by Whitney and others, were fully admitted by Sweet.

AN address by Mme. Curie on the radio-elements and their applications appears in the *Revue Scientifique* for October 23. After reviewing succinctly the marvellous progress in the subject during the past two decades, and the current views to which the study of radio-active substances has led, reference is made to their applications for the manufacture of luminous compounds and in medicine. The first, though largely developed during the war, are obviously of application in innumerable ways for peaceful purposes wherever the cost of the radio-active materials is not prohibitive. In addition to the medical applications, such as for the treatment of lupus and arthritis, radium-therapy was during the war applied to the treatment of unhealthy scars and wounds, healing in numerous cases being assisted by irradiation. In spite of the slowness of the progress so far made, radium is regarded as a very powerful means of combating cancer, the number of deep cancers successfully treated steadily increasing. It is important that in all countries full use should be made of all resources in radio-active materials. As possible new sources the more active springs are referred to, one in Italy being mentioned which gives about 30 millicuries of emanation in 250 cubic metres of water daily. If this could be separated it would prove of great service in medicine. The proper utilisation of these resources would be facilitated by the establishment of central national institutions for pure researches in radioactivity in connection with an industrial laboratory for the treatment of large quantities of materials, and a section devoted to radium-therapy and its teaching. In conclusion, a strong plea for such an institute is made for France which shall be worthy of the country and its capital. Hitherto the requirements of medical men and physicists have been too exclusively considered.

IN the May and November issues of the Journal of the Royal Photographic Society Dr. W. H. Mills and Sir W. J. Pope publish the results of their work during the last few years on photographic sensitisers. In the first communication they describe the preparation and sensitising effect of twenty different *iso*cyanine derivatives, one of which, trimethyl*iso*cyanine iodide, is now well known as pinaverdol or sensitol green. They find that the total induced sensitiveness diminishes steadily as the molecular weight of the dye is increased by the introduction of heavier radicals, and they are able to draw other inferences that may prove useful guides in seeking for new sensitisers. Of these twenty derivatives, which include ethyl red and pinachrome, it appears that none is so generally advantageous as sensitol green. The second communication treats of the "carbocyanines," and describes the preparation and action of eighteen different derivatives. One of the diethylcarbocyanine iodides is pinacyanol or sensitol red, and it is found that the sensitising power for gelatino-silver bromide is far less in the dimethyl derivative, and that it sinks gradually on passing to the dipropyl and dibutyl compounds. In the *iso*cyanines the two quinoline residues are linked by the group ⁚CH·, while the joining group in the carbocyanines becomes ⁚CH·CH⁚CH·. The lengthening of this linking chain is accompanied by an extension of the extra sensitisation far into the red region of the spectrum, and the authors suggest that if methods were available for still further lengthening this chain it would be possible to produce compounds that would sensitise still further into the infra-red. Inferences are also drawn with regard to the effects of the positions of the substituting radicals and other matters.

THE Research Defence Society has lately published four pamphlets of general interest, namely: (1) Vaccination, by Dr. Mary Scharlieb; (2) The Prevention of Tetanus during the Great War by the Use of Antitetanic Serum, by Sir David Bruce; (3) The Work of the Medical Research Committee, by Sir Walter Fletcher; and (4) The Value of Experiments on Animals: Notes of Personal Experience, by Sir Leonard Rogers. The set, price 2*s*., may be obtained from the society's Secretary, 11 Chandos Street, Cavendish Square, London, W.1.

IT is eight years since the first edition of Prof. F. Soddy's volume, "The Interpretation of Radium," was published, and during that momentous period the necessity for enlarging and revising the original version has been proved. Mr. Murray announces that the author has been at work, and, with due compressions and the right additions, particularly those that bear upon the problem of the constitution of the atom, has brought the volume as closely up to date as is possible with a large and rapidly extending subject.

Our Astronomical Column.

LONGITUDE BY WIRELESS.—The scheme for linking up the observatories of the world by utilising wireless time-signals was referred to in NATURE for May 20 last (vol. cv., p. 370). It must be understood that no appreciable increase of accuracy over the older method by cable signalling is claimed; indeed, where the observers are not interchanged the precision is less. But the gain in convenience, expense, and wide distribution of signals is considerable, and it is known that where the travelling-wire method of observing transits is adopted, personality is greatly reduced; what remains is of the same order as the small local deflections of gravity, which can be eliminated only by extensive geodetical operations.

Mr. Dodwell, the director of Adelaide Observatory, has communicated the longitude which he deduces by the reception of the Lyons and Annapolis signals at Adelaide and Greenwich. It is 9h. 14m. 19·95s. using Lyons signals, and 19·78s. using Annapolis ones. The Nautical Almanac value is 20·30s. Allowance has been made for time of transmission, assuming a speed equal to that of light.

Many of the Australian boundaries are defined as meridians east of Greenwich by a specified number of degrees. They were determined by lunar observations and are known to be in error by some miles. It is not, however, expected that any change will now be made in them.

AN APPARENT EARTH-EFFECT ON THE DISTRIBUTION OF SOLAR FACULÆ.—The Monthly Notices for June contains a paper on this subject by Mr. E. W. Maunder, who acknowledges important help from several others in discussing the material, which consists of the Greenwich photographs from 1878 to 1916. The research was undertaken to test the result announced by Mrs. Maunder in 1907 that there was a preponderance of spots on the eastern half of the visible disc. Suggestions were made that this might arise from the spots sloping backwards or from the surface being heaped up behind the spot, thus avoiding the necessity of invoking an "earth-effect." The faculæ, however, since they are evidently above the surrounding surface, could scarcely be affected in either of these ways, so that an eastern preponderance seems very hard to interpret otherwise than as an earth-effect. Such a preponderance is, in fact, shown for the greater part of the period under discussion. The average excess for thirty years is about 3 per cent.—a quantity of the same order as that found by Mrs. Maunder for spots, and later for prominences. The northern and southern hemispheres of the sun are plotted, and show a general accordance, with differences of detail. There is fairly clear evidence that the eastern excess varies with the progress of the sun-spot cycle, being least marked during the increase of solar activity and most marked during its decline. In other words, regarding the earth-effect as a damping influence on the spot activity, then the solar resistance to this damping is greatest at the time of increasing activity.

THE DENSITIES OF BINARY STARS.—In a paper in *Mem. della Soc. degli Spett. Ital.* (vol. viii., Ott., Nov., Dic., 1919) Dr. G. Abetti discusses the densities of several binaries of which the relative masses and parallaxes are known. The diameters are inferred from the absolute magnitude, and surface brightness is inferred from the spectrum. The extreme values of density are 0·002 for ε Hydræ A and 1·87 for ε Hydræ B. On plotting the mean densities as functions of spectral type, there is a slow but steady decline from 0·60 for A5 and 0·55 for F5 to 0·45 for G0 and 0·2 for K0. This agrees with Prof. H. N. Russell's hypothesis on the assumption that the stars in question are in the giant stage, passing from an early diffused condition (type K0) to one more condensed through the types G, F, and A. Plotting mass as a function of absolute magnitude, all masses above 1·5 have about the same absolute magnitude, while all the fainter absolute magnitudes have about the same mass, the mean for these being about 0·3. The number of stars discussed is too small to lay great stress on the results.